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ALCOHOLISMUS.

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By George C. Shattuck, M.D.

The word Alcoholismus having been introduced into nosology, and there being a question as to what cases it is applicable, it is proposed at this time to analyze the histories of three patients whose symptoms were mainly referable to the poison known as alcohol.

A large, fat man, 47 years of age, came under treatment (in the Massachusetts General Hospital) in the month of December. His friends described him as a high liver, and said that for the last twelve or fifteen years he had indulged freely in vinous and alcoholic drinks. He had spent twelve years in the East Indies; had good uniform health there, and during three subsequent years, spent in this city, when he took but little exercise, indulged freely in eating, drinking and smoking, but still called himself a well man, and was not regarded as an invalid by his friends, till within the last five months, when weakness and loss of appetite were prominent symptoms. Five days before coming to the Hospital, he noticed his legs and belly as swollen, and on that account consulted a physician for the first time, and went to the apothecary to get the prescription. He was so helpless, nervous and querulous that his friends sent him to the Hospital. He was found with a light complexion, a countenance pale and troubled, so weak that he needed assistance to get out of bed, general anasarca, marked ascites, dulness and deficient respiration over lower backs, but with no cardiac symptoms, except a feeble impulse; the pulse regular, though weak, anorexia, the tongue moist and flabby, with a white coat. The urine scanty, high colored; bile and albumen were found in it, but no casts. Diuretics and stimuli were administered as he could take them, but his unfavorable symptoms continued. He lost strength rapidly, was dull, indisposed to exertion, and did not complain of pain. The abdomen was so distended as not to admit of a satisfactory exploration of the hepatic region. The bowels were kept open, the discharges loose, not remarkable in color, and involuntary during the last two days. Somnolence and increasing weakness were then the prominent symptoms. His respiration was somewhat embarrassed, and he died, unexpectedly, thirteen days after coming to the Hospital, and eighteen days after first seeking medical advice.

At the autopsy, by Dr. Ellis, the lungs were noted as healthy; the lining membrane of the heart stained by contents. Just within the edge of the annulus ovalis was a direct opening, one fourth of an inch in diameter. The substance of the heart soft and of a pale lemon color. On microscopic examination, the striæ were generally invisible, and when seen, were very faint. The fibres contained much granular matter. Peritoneum contained eighteen pints of serum. Liver weighed more than eight pounds; everywhere streaked with granulations of a bright yellow color, and varying in size from one to three lines. Tissue quite dense, resisting the knife more than usual. Microscope showed it to be very fatty. Spleen large; weight, fourteen and a half ounces. Kidneys both quite large; weight of right, thirteen ounces, that of left, eleven ounces and a half; cortical substance thick and of loose texture. Microscope showed the tubuli to be composed in great measure of granular matter and minute globules. Mucous membrane of stomach somewhat grey. Other organs normal.

This man had undoubtedly overtasked his kidneys and liver by taking too much food; still the hydro-carbonaceous material had been converted into fat and stored away. We must believe alcohol to have been the main agent in causing his disease. We find fatty degeneration of the heart, and death resulted immediately from the failure of this organ to discharge its duties. We may note that a feeble impulse and pulse were the only cardiac symptoms. There was no murmur, notwithstanding the communication between the two hearts. The size of the heart was not modified. To what shall we attribute the somnolence; to uræmia or cholesteræmia? There was grave structural disease of both liver and kidneys; neither of these organs could have properly discharged its duties of excretion, nor could the liver have performed its part in assimilation. No disease of the stomach, and anorexia such a prominent symptom, and that organ a recipient of so much alcohol! We must note, also, the patient's not complaining of pain, and not being aware of being a sick man till within three weeks of his death, whilst the diseased processes must have been going on for years.

Another case is that of a widow, a laundress, 46 years of age, who had borne seven living and two dead children, but had not had much sickness, and considered herself well, till within five months of entering the hospital, when she noticed anasarca, and, soon after, ascites. She admitted that appetite and strength had been failing for two years or more, and that she had been addicted to the free use of alcoholic stimuli for many years. She was in bed when first seen, which she kept, getting up only to have it made. She was decidedly fat, her countenance pale and puffy; decubitus on left side preferred; the tongue but little coated, moist; the appetite very small; digestion difficult; the abdomen much distended, fluctuating; the pulse 90, regular, its stroke and that of the heart feeble. Nothing remarkable on exploration of chest. She had been imbibing spirituous drinks freely just before entrance. The urine was of a brown color, acid; specific gravity, 1.012. No abnormal ingredients discovered on chemical examination; a few tube casts and epithelium under the microscope.

The bowels were kept quite free by laxative medicine; she took the tincture of the muriate of iron, gallic acid and tannic acid in succession, as she was able to bear them; but the stomach was easily disturbed, and she had occasional attacks of bilious vomiting. She had pain in the lumbar region, and, two or three times, of great severity. The appetite and capacity for food small; a little bread or gruel or broth constituted her nourishment. The abdomen became so much distended, and she was so uncomfortable, that she was tapped after being in the Hospital five weeks, and a pailful of yellow, viscid fluid removed. A soft, movable tumor, of about the size of a hen's egg, was found just below the angle of the right ribs on exploration, which may have been the gall-bladder, the liver being felt in the epigastric and left hypochondriac region. She was more comfortable, slept better, and took more food; the relish and digestion much improved. At the end of four days she was again running down; weakness, loss of appetite, somnolence, were the principal symptoms. She died one week after being tapped, and six weeks after entering the Hospital, very easily, and when for twelve hours the respiration and circulation were gradually failing. No autopsy was allowed.

Now what shall we say this woman died of? Is there much, is there any doubt of fatty degeneration, extending to the heart, liver and kidneys? If, with Dr. Austin Flint, Jr., we regard cholesterine as the excretory product of the liver, did she die from cholesteræmia? Was there not also uræmia? No albumen was discovered in the urine, but neither the chemical nor the microscopical examination was repeated often enough to make one sure of the condition of the kidneys. Two or three examinations were made, and no albumen discovered. The three organs, the heart, the liver and the kidneys being the seat of decided structural lesions, we cannot be surprised that dropsy was a prominent symptom. The dropsy did not kill her, although it contributed to a fatal result. If we say that she died of chronic alcoholismus, do we not designate the principal point in etiology, and is not this one of those cases where it is best to give the name of the disease from the cause?

A pale, thin man, 29 years of age, a waiter in a hotel, was under observation in January last for fifteen days. He had had diminished appetite, difficult digestion and occasional vomiting for several years, during which time he had taken alcoholic drinks frequently, at short intervals during the day, and had smoked freely. He had never had delirium tremens, never got drunk. He had done no work for ten weeks, and kept his bed for ten days. He had no headache, but was weak; pains and soreness of trunk and limbs, and occasionally sharp pain in epigastric region. Has vomited a sour liquid frequently for two days; anorexia; palpitation; dyspnœa; constipation; occasional fluttering in cardiac region. Pulse 90, quick, small and regular. Nothing remarkable on exploration of thorax and abdomen. Urates in large amount at entrance, but the renal secretion not otherwise remarkable. Bowels kept free by medicine; dejections not remarkable.

Under a regulated diet and the administration of laxatives and tonics, the nausea, vomiting, constipation and anorexia disappeared; he gained strength, but still had occasional pain and indigestion, and was weak when he left the Hospital.

We might call this man's disease dyspepsia, but the free use of alcohol and tobacco were the only causes to which his symptoms could be attributed. The alcohol, apparently, was not determined to the brain. Were not the liver and kidneys suffering? Had fatty degeneration commenced in the heart? Should we call this a case of alcoholismus, perhaps of nicotismus?

We still have much to learn of the effect of these poisons on the economy. We had no evidence in this case of structural changes in the liver and kidneys, but both were imperfectly performing their functions; and although we had no satisfactory evidence of the failure of the liver to excrete, we should accuse it of not performing its office in assimilation.

These cases, which have thus been analyzed from histories with many details, are not very satisfactory as to diagnosis, prognosis or treatment, but questions are raised by them which are frequently presented, and to which we have not as yet satisfactory answers.

The recent researches of Ludger, Lallemand, Maurice Perrin and J. L. P. Duroy have thrown much light on the effect of alcohol on the economy. Liebig's idea of its being decomposed and its hydrogen set free, seems no longer tenable. The alcohol itself is in the blood, comes into contact with nervous tissue and with secretory and excretory cells, and subserves nutrition only as it stimulates nervous action. How it favors fatty formation and degeneration we do not as yet know, but we cannot deny the fact. The most recent researches confirm long established ideas of mischief done to the liver, alcohol itself being found in the gland. Its presence in the urine is established, and disease of the kidneys in those addicted to alcoholic drinks, whose kidneys are called upon largely for eliminative action, is to be expected. We need more careful study of symptoms and lesions in those addicted to alcoholic drinks, where the poison is not especially determined to the nervous centres. Drunkenness and delirium tremens are comparative well known. And is not a good deal to be learned from the free use of alcohol as a therapeutic agent in phthisis? Unfortunately, we have ample opportunities of studying this subject, and all interested in the practice of medicine must welcome all anatomical and physiological results which throw light on affections often complicated and obscure.

CASES COMMUNICATED TO THE BOSTON SOCIETY FOR MEDICAL IMPROVEMENT AND TO THE BOSTON MEDICAL AND SURGICAL JOURNAL.

By Thomas H. Gage, M.D., of Worcester.

Case I.—*Inter-ventricular Opening in a Man of robust Health; Aneurism at the Origin of the Aorta, projecting and finally bursting into the Cavity of the right Ventricle.*—Dec. 26th, 1860, I was requested by Dr. Ames, of Holden, to examine the patient, and the following quotation is from my record of the case:—

Mr. H., now 19 years of age, has been perfectly healthy all his life, until within four weeks past, saving that in childhood he had measles, whooping cough and scarlet fever, all very mildly, and followed by convalescence every way favorable. He was an active, strong and very playful child, and capable of great endurance. He never had any lividity of surface. As he grew up, although wild and wayward, he was a willing and hard worker upon the farm. Some six months since he went to California, where, meeting with poor success, and having spent all his money, he determined not to remain. Unable to pay for a passage home further than the isthmus, he there enlisted in the navy of the United States, and took passage in a war vessel bound for New York. Having arrived just below that harbor, the ship lying within an eighth of a mile of shore, he availed himself of an opportunity at night when it was his watch, and having bound a life-preserver around him, jumped overboard and swam ashore, thence making the best of his way home on foot, a distance of quite two hundred miles. He reports that he was entirely well during his absence, and that he experienced no inconvenience from the effort or excitement of his escape from the ship.

About four weeks previous, while stooping, and lifting at a heavy stone, he was seized suddenly with a sharp, severe pain across the lower part of the chest, extending around to back. This was in the forenoon. The pain continued through that day, and he had a little cough, with slight expectoration of blood, which, however, subsided before next morning. From this time he began to be troubled with shortness of breath upon any unusual exertion, such as running, walking in the face of a high wind, up hill, or the like, and gave up all work. His appetite somewhat failed him, but sleep continued quiet, and he could lie comfortably in the horizontal posture at night. He had a slight dull pain under short ribs of left side. Upon laying my hand over the cardiac region a very strong purring thrill was imparted to it, which seemed most intense immediately over the region of the aortic valves, and diminished in intensity in receding from that point in every direction, though remaining very distinct over almost the whole front of chest.

There was dulness upon percussion over the præcordial region, in a space at least four inches square; and there was decidedly increased impulse. There was a systolic and diastolic bellows-murmur, which seemed very superficial (i. e., near the ear), and which increased as the ear approached the aortic orifice, but was very loud at the apex, and also along the course of the aorta and the great vessels given off from the arch. This murmur was so loud that it was distinctly audible upon bringing the ear within an inch or two of the walls of the chest. There was a strong pulsation of the subclavians above each clavicle. The pulse was about 80, small and thrilling, and seemed unequal in the two radials, occasionally intermitting a beat, or giving one of very diminished volume. Respiration, while at rest, normal.

For three or four weeks the case went on without apparent change. On Friday evening, Jan. 20th, he went as spectator to a "dance," and remained until 12 o'clock, indulging somewhat freely in liquor. After his return home he could not sleep, and had urgent dyspnœa, which prevented him from lying down. He had also severe and continued vomiting, at first of undigested food, afterwards of green, viscid fluid, and at last of dark, "coffee-grounds" looking liquid. Saturday morning the dyspnœa increased in severity, attended by frightful paroxysms of suffocation, in which the extremities became cold and covered with clammy sweat, and the lips, tongue, and cheeks deeply purple. Saturday afternoon violent pain in the bowels came on, and he continued through that night and the day following in extreme agony.

I saw him Sunday evening, in consultation with Dr. Ames. He was in bed, with head and shoulders elevated. Although not sleeping, he was quiet and dozy, being free from pain and under the influence of large opiates. His respirations were 56 in a minute, short, imperfect and groaning. His pulse was very irregular and small—as nearly as could be counted, 130. His lips and cheeks were purple, and his extremities cold.

Of auscultation of the heart at this time I can give no satisfactory account, the sounds having become so mixed and confused as to resemble in my ear only the wild rushing of wind in a storm.

He died very suddenly in the night.

The autopsy was made thirty hours after death. The right pleural cavity contained between two and three pints of thin, strawcolored serum, and there was a somewhat smaller quantity in left. In the pericardium there was also a small effusion, and in the peritoneal cavity two or three pints. The heart was more than double its usual size; the walls of the right ventricle being relatively more hypertrophied than the left. There was a small spot (as large as the thumb-nail) of recent lymph upon anterior surface of right ventricle, and traces of lymph along the course of the anterior coronary vein. The interventricular opening had, in the recent specimen, more the form of a half circle than now appears, and would easily pass the middle finger. The crescentic edge was thick and rounded, towards the septum between the ventricles. The valves of the pulmonary artery were nearly or quite normal—contrary to what is usually observed in these cases. The aneurism was empty and flaccid, and its walls extremely delicate and thin. It would just admit, and fitted like the finger of a glove, the terminal phalanx of my forefinger and about one fourth of the next. Its origin was from one of the pouches just at the aortal valves.

This man lived just two months after the pain first felt from lifting the stone, and just four weeks after my first examination; and it was my opinion that the aneurism commenced at the time he lifted the stone. The rupture of this pouch, which was very distinct in the recent specimen, was caused, I have no doubt, by the violent vomiting of Friday night and Saturday morning, and gave rise to the extreme agony of his last few days of life.

CASE II.—*Stricture of Œsophagus; Adhesion to Trachea; Ulceration and Perforation.*—Sept. 22d, 1860, I was consulted by Mrs. W., aged 42, a short, spare woman, of dark and somewhat sallow complexion. She was married, but had no children, and for some months had been growing irregular in her menstrual habits. She informed me that her disease was stricture of the œsophagus, that she had suffered from it for twenty-four years, and that it was owing to an injury, as she supposed, caused by swallowing a chicken bone.

For the first two or three years in which it troubled her, her health became so much impaired that her life was despaired of. She could only take liquid food, and that in very small quantities, and was constantly annoyed by lodgment of food above the stricture. Twenty years before I saw her, she had visited Boston, and placed herself under the care of Drs. Warren and Hayward, at the Hospital. Ivory-headed bougies were passed, and at her dismissal she was provided with a pair, of different sizes, and directed to use them from time to time as subsequent occasion might require. Under this treatment great improvement took place, and until within the last four weeks the stricture had given her very little inconvenience for many years.

Some time during August she had found the obstruction to food increasing, and that swallowing or passing the bougies was attended with soreness and pain. These symptoms had rapidly increased in severity up to the time when I saw her. There was then, as passing the ball probang (about three eighths of an inch in diameter) proved, a stricture, about three inches below the fauces, through which the instrument passed with difficulty, as if over a rough, broken, cartilaginous surface, of at least two inches in extent. Its passage was attended with a good deal of pain. There was then no difficulty of breathing.

In just four weeks, I saw Mrs. W. again. The difficulty of swallowing, the pain and the soreness of the passage had all very much increased, and in addition she had most distressing dyspnœa. She had paroxysms of breathing resembling the spasmodic croup of infants, though not affecting her voice; and during these paroxysms her respiration was excessively labored and painful. She could take but little food, and that cost her great effort and distress. Soon after this the dyspnœa became continuous, with occasional exacerbations of agonizing severity; swallowing of food became almost entirely impossible, and nourishment by injection the only practicable method. There had been some cough from the first accession of dyspnœa, but there was no expectoration until a few days before death. Then there was at first small, scanty sputa of pus, but at last occasional gushes of purulent matter, of considerable quantity at a time. Mrs. W. died Nov. 7, 1860.

The specimen shows the ulceration to be even more extensive than it was supposed to be during life.

Case III.—*Large Simple Cyst in Mammary Gland.*—Jan. 29th, 1863, I was called to see Mrs. L., aged 62, a lady of fine personal appearance and excellent general health, but somewhat inclined to corpulency. Some three years previous, she first discovered a small, painless tumor in right breast, which grew slowly, giving rise to no inconvenience, until at the end of two years it had become "as large as a goose egg." From this time she began to give it considerable attention, and made "a great many applications" to it, and it increased with corresponding rapidity. For a few weeks prior to my examination the growth had been very rapid, and discoloration of its summit had taken place.

I found a large, globular, fluctuating tumor, occupying the whole of the right breast; the skin upon its summit thin, tense, shining, and of greenish color; the nipple pushed away to the outer side, and the whole mass perfectly free and unattached. It had become exceedingly troublesome by its bulk and weight. I removed it on the next day; the wound healed promptly, and the patient has been perfectly well since.

The whole mass removed weighed, in the fresh state, three and a quarter pounds; the contained fluid was over one and one half pints, and consisted of thin, bloody liquid, intermingled with shreds and flakes of dirty, soft coagula. There was but *one* cyst. There was, especially at the base and dependent portions, some masses which looked like adherent, firm coagula, and there were also some looser, tuft-like masses, from which floated loose shreds of tissue into the fluid. Otherwise the inner surface was smooth and shining.

I infer that the rapid growth towards the last, and the discoloration, were caused by hæmorrhage within the cyst.

ON THE TREATMENT OF WHOOPING COUGH BY BELLADONNA AND SULPHATE OF ZINC.

By E. Garraway, Esq., M.R.C.S.E.

Until a comparatively recent period the treatment of whooping cough may justly have been regarded as one of the *opprobria medici*. The authorities of the profession not even yet being agreed upon its true pathology, it is no marvel that the treatment has been more or less empirical; that notwithstanding there have been countless "infallible specifics," yet the ordinary duration of whooping cough, except when the epidemic prevails in a mild form, is still three, and even during the winter as much as six, months.

I am not about to enter into the question of the specific nature of the disorder, whether its seat be in the mucous or muscular lining of the air-passages, in the brain, the spinal cord, the stomach, the pneumogastric nerve, or elsewhere. The preponderance of opinion in the present day is largely in favor of its being a nervous disorder; and at least it would appear to have quite as much claim to be so considered as asthma, ague, chorea, epilepsy, or other convulsive disorders which it has been found impossible to localize. In mild, uncomplicated cases of whooping cough, not even functional derangement of any organ can be detected. In the intervals of the attacks of cough and concomitant spasm, a state of perfect health subsists.

The observations I have to offer are solely confined to "treatment," and one form of treatment—viz., that by belladonna and sulphate of zinc. A very extensive prevalence of whooping cough during the past winter has afforded considerable opportunities of testing the value of these remedies; indeed, I have treated every one of my cases—numbering between fifty and sixty, and these limited to private practice—with zinc and belladonna, to the exclusion of all other remedies. Of course the supervention of anything like bronchitis or pulmonary congestion has required the administration of emetics; but these cases have been rare, and in only two have I had occasion to suspend the belladonna treatment for two or three days, and substitute for it ipecacuanha, antimony and external counter-irritants. In the comparatively small number of fifty cases, it is not surprising that I have no death to record. The mortality, however, has been exceedingly large—in London amounting to from 80 to 100 a week during several months—once even rising to 124. In my own district, the registrar informs me that, in a population of 9000, he recorded from October to April fourteen deaths as due to whooping cough.

The first three cases I saw occurred in a school. They were boys between the ages of six and nine. The paroxysms in all were moderately frequent and severe; the general health was good. Two were placed under my care; the third was left to take his chance. In eighteen days my patients had entirely ceased to cough, whilst the other boy was in precisely the same state as when I first saw him, and so continued for several weeks afterwards.

A little girl between two and three years old was brought to me, whose fits were described as of the most violent character; and indeed the poor child's appearance did not belie the mother's statement, for both conjunctivæ were so entirely ecchymosed that the white sclerotic coat was invisible; no blow, however severe, could have produced a more complete pair of black eyes. For a fortnight there was not the slightest improvement, and I was in consequence much troubled to keep the patient up to her medicine; in one week more, however, the cough was gone, and the ecchymosis had completely disappeared.

Three weeks afterwards the mother came for the same medicine for her infant, eight months old, who coughed and whooped, she told me, a dozen or twenty times in the day and some half dozen times in the night—not a severe case. I exhorted her not to be disheartened for three weeks, but to come regularly for her supplies. She never made her appearance again; and on meeting her some time afterwards, and expressing my regret that the treatment had not been followed up, she replied—"Why, the medicine you gave me lasted a week, and by that time the cough had entirely ceased, and has never returned."

These are samples (which might be multiplied) of the more favorable class of cases. Others were marked by a steady improvement, commencing at once and continuing day by day; but at the same time I must admit that not a few required fully three weeks to make a decided impression. After this period, however, the improvement was most rapid; indeed, treatment was seldom continued beyond the third week. The most lengthened period for which, in any case, belladonna was administered was five weeks. I found that if by this time the cough was not quite gone, it was nevertheless desirable to discontinue the remedy; as it would seem that after the system was thoroughly saturated, a further persistence deranged the general health without any commensurate advantage accruing; the tongue became coated, the appetite failed, and vomiting without cough would occasionally occur. On ceasing, however, to take the medicine, not only did all these untoward symptoms subside, but the remains of the cough vanished with them.

Marsh miasmata appear to render whooping cough, as they do most other forms of disease, more intractable; and two children I could do nothing with until removed from the swamp in which they resided.

The mode of administering the belladonna was in the form of extract, either diffused in water with the sulphate of zinc and sufficient syrup to make it agreeable to young children, or, to those who were old enough and preferred it, in the form of pills—the dose being from one sixth to one fourth of a grain of the extract, and one half to a grain of the zinc, three or four times a day, steadily increasing the amount till, at the end of three weeks, children of five or six years old would be taking from four to six grains of belladonna, and twice that quantity of sulphate of zinc, daily.

So far as my investigation went, it would appear that both the tolerance of the remedy and the speedy subsidence of the disorder were in inverse proportion to the age of the subject—a child of eight or ten weeks old bearing a much larger proportionate dose than one of eight or ten years, and manifesting a much more rapid improvement. In this I find I am in accord with other observers.

Dilatation of the pupils and indistinctness of vision commonly came on after a few days. When these effects manifested themselves the dose was diminished somewhat; but having been assured by Dr. Fuller, of St. George's Hospital, whose experience of the physiological effects of belladonna has been considerable, that no permanent injury ever resulted from this condition, I did not think it necessary to interfere with the general line of treatment.

In two cases more decided poisonous symptoms were developed. One was a little girl of six, who had reached the amount of six grains daily, and whose pupils had been dilated more or less for a week. This child became one day, as her parents termed it, " silly," delivered wrong messages, gave inapt answers, asked what had become of her sisters when they were present, and talked in an incoherent and ridiculous manner. This state quite passed off the next day by discontinuing the medicines.

The other case was that of a very delicate little girl of four years, who had attained to four grains a day. I was called to her in the night under the great alarm of her parents. She had been in a state of immoderate mirthfulness and excitement during the evening, and on being put to bed could not be quiet, and at length became delirious, singing, calling for her mamma and nurse, of whose presence she was unconscious, picking at the bed-clothes, seeing imaginary objects—in fine, presenting a train of symptoms very analogous to what we witness in delirium tremens in the adult. This state was succeeded by three or four hours of refreshing sleep, such as the child had not experienced for many nights. On awaking, she was perfectly restored, and from that hour the improvement was remarkably rapid. I need hardly say I suspended the remedy for a day, and gave it afterwards in diminished doses.

Such, in brief, has been my experience of the treatment of whooping cough by belladonna and sulphate of zinc. Which of these two had the greater share in the favorable results I am unable to say, since they were not in any case disassociated; but as similar results have followed the exhibition of belladonna alone in other hands, it is reasonable to conclude that this was the more active agent. It ought perhaps, in fairness, to be recorded that some cases which were cured at the beginning of the winter showed a tendency to a return of the disorder when the cold north-east winds of March set in. Few of these came under treatment, as the relapse was not of a severe character; when, however, belladonna was given, its effects were marked and immediate.

From the limited data afforded by fifty cases of whooping cough, it would be presumptuous in me to speak authoritatively as to the propriety of this or any other mode of treatment; nor should I have obtruded these observations were I not impressed with the conviction that the belladonna treatment is not so generally, or at least so universally, accepted as it deserves; and in this I am borne out by the fact that in one of our best modern works upon the diseases of children—namely, Dr. West's—the very name of belladonna in connection with whooping cough does not once occur.—*London Lancet.*

A FEW REMARKS ON ASTIGMATISM.

BY J. F. BUMSTEAD, M.D., SURGEON TO THE NEW YORK EYE INFIRMARY.

I DO not propose to write a complete essay on astigmatism. As the term, however, may be new to some readers, a few words in explanation of its meaning may be desirable.

The surface of an ordinary double convex lens may be supposed to have the curvatures of all its sections equal. This is, indeed, essential to make such a lens a useful optical instrument; for suppose the curvature of one section to be greater or less than that of another—in other words, suppose the optician to have ground the two surfaces of the lens unevenly—no clear and distinct image of any object can be obtained through it, because the rays of light striking upon different portions will be unequally refracted, and will fail to come to a focus and form an image in the same plane.

Now simply substitute the word *cornea* for the word *lens* in the above remarks, and you have an explanation of astigmatism. A typical cornea, one of the refracting media of the eye, may also be regarded as a surface of revolution with the curvatures of all its sections equal;* hence rays of light proceeding from a luminous point and striking upon various parts of its surface are equally refracted, and passing through the other dioptric media of the eye, are brought to a focus at one point within the globe. But in the astigmatic eye nature has not ground the cornea in an equal manner; its curves vary to a greater or less degree; thin sections cut in various directions and placed one upon another will be found, if critically examined, not to correspond. Hence rays of light proceeding from a luminous point and passing through such a cornea, are not brought to a focus at a single point within the globe, but each distinct place of refraction has its own focus; and hence the origin of the name (probably not the best that might have been chosen) from *a*, privative, and *stigma*, a point, signifying without a point or focus within the eye to which rays of light converge.

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* Strictly speaking, the normal cornea is not a surface of revolution, since the curve of the horizontal plane is usually less than that of the vertical; but the difference is only regarded as a disease when it exceeds ordinary limits and is capable of being corrected by cylindrical glasses. In this paper, which is intended to be purely elementary, normal astigmatism may be ignored.

Nature preserves a certain regularity even in the irregularity we are now considering. She does not select at random one of the infinite number of planes which may be supposed to pass through the antero-posterior axis of the eye, as the one which shall present a curve greater or less than the normal curve of the cornea; but it is commonly either the vertical or the horizontal plane, or one nearly approaching them, which is thus defective. Suppose it to be the former, or vertical plane, and suppose also that the curve of the cornea in this plane is too convex; then the rays of light entering the eye in this plane will be too strongly refracted, and will come to a focus in front of those rays which enter in the horizontal plane (supposed to possess the normal curve); in other words, the patient will be myopic in the vertical meridian of his eye, although his sight is normal in the horizontal meridian; and when looking at a distant object, he will see its lateral edges distinctly, while its upper and lower edges will be blurred. Again, instead of being too convex, the curve in the same plane may be too flat, when the rays of light in the vertical meridian will come to a focus behind those of the horizontal meridian, and the patient will be hyperopic in the vertical plane; or, again, the vertical meridian may be normal while the horizontal meridian is either myopic or heperopic; while, still again, both the vertical and the horizontal meridian may vary from the normal type, both being either myopic or hyperopic, but each to a different degree, or the one may be myopic and the other hyperopic. Thus it will be seen that the term astigmatism, although always applied to a variation in the refractive power of the eye in different planes, may include a considerable variety of pathological conditions.

An excellent history of our knowledge of astigmatism may be found in the well-known volume of Dr. Mackenzie upon diseases of the eye. The disease was first discovered by Mr. Thomas Young in 1801; a remarkable instance of it in his own person was reported by Mr. Airy, Astronomer Royal, in 1827; a few other cases were also brought to light by various observers; but neither the frequency, the symptoms, nor the treatment of the disease were fully appreciated until the publication, in 1862, of Prof. Donders's work, entitled "Astigmatismus und Cylindrische Glaeser." With regard to its frequency, Prof. Donders states that he has met with it on an average in one out of every thirty eyes that he has examined. The symptoms of this disease and the means of diagnosis will appear in the report of the following case:—

Mr. L. F., aged 38, a lawyer by profession, applied to me May 3d, 1863, for "dimness of vision," which had troubled him for the last twenty years. He had been under the care of several surgeons, who had treated him for "amaurosis" or "asthenopia." His own account of his symptoms was obscure and unsatisfactory, and amounted to this:—that he could not see well, especially after mental excitement or bodily fatigue; that, for instance, when trying a case in court, or after a late supper or excessive smoking, he found it extremely difficult to use his eyes; and that he had tried many kinds of glasses without benefit. Nor did the ordinary methods of examination afford any better clue to the nature of his disease. I found on trial that he could read No. 20 of Dyer's tables at twenty feet. His power of accommodation was normal for his age. There was no insufficiency of the internal recti, nor any defect in the other muscular apparatus of the eye. Upon examination with the ophthalmoscope, the fundus oculi and dioptric media appeared to be perfectly healthy.

Although puzzled for a moment at this result of my examination, the thought soon occurred to me that this might be a case of astigmatism, and I proceeded to question my patient more closely with regard to his symptoms. I asked him if, in looking at an object, he ever saw one portion of its outline more distinctly than another. He replied yes; that in walking through the street at night and looking at a lighted window, the upper and lower edges appeared blurred, while the lateral edges were distinct. Again, in looking at a sign across the street, there appeared a second series of letters, fainter than the true image, and overlapping the latter above and below, and he had observed that this was the case whether one or both eyes were open. This indistinctness of the outline of objects in a vertical direction never entirely disappears, but varies greatly according to the condition of his nervous system. Under ordinary circumstances, it is noticed only when looking at objects which present a marked contrast in color or brightness, as the lighted window and gilt letters upon a black sign, just mentioned; but let him be fatigued or excited, and the dimness appears to affect all objects—even the figures upon the carpet, the ordinary type of a book, or newspaper, &c.

Taking up Snellen's tables of test type, and selecting the one in which the letters are white upon a black ground, I now requested the patient to describe their appearance. He voluntarily placed himself at a distance of about eighteen feet, and looking at the capital C of No. 100, told me that he saw a second image overlapping in a vertical direction the true image and with its upper edge about half an inch above the latter; also, when regarding the smaller letters of No. 20, he saw a complete reduplication of the figures projected upon the black ground above. In both instances the lateral margins of the letters remained distinct, and the effect was the same if either eye was closed. Having cut a narrow slit in a card, I placed the fissure in a horizontal direction before one eye, the opposite being shut, when the patient immediately exclaimed that the indistinctness of outline had disappeared; but on the contrary, it was heightened, when the position of the fissure was changed to vertical. Other similar tests were also applied. For instance, the holes in an ordinary catheter gauge held before an argand burner appeared to the patient not as circles, but as ovals with their longer axes vertical, and this direction was changed to the horizontal if he inclined his head to a right angle with the axis of his body; moreover, the normal circular image was brought out by looking through a slit in a card in the manner above described.

It was now evident that my supposition was correct, and that there was a defect in the refractive power of the eye confined to the vertical meridian; it remained to discover in what this defect consisted, whether myopia or hyperopia, and also its degree. For this purpose I placed him under such conditions as would render the indistinct vision most marked, viz., with the slit in the card in a vertical direction so as to cut off the horizontal rays; and trying various glasses both convex and concave, I soon ascertained that several of the latter diminished, and that a double concave glass of 30-inch virtual focus completely removed the difficulty. My patient was, therefore, myopic to the extent of 1-30 in the vertical meridian of each eye, while his vision was normal in the horizontal plane.

In a second examination with the ophthalmoscope I observed a phenomenon which previously escaped me. If an astigmatic eye, owing to the defective refraction of its media, sees a circle as an oval, a circle at the fundus of an astigmatic eye should appear oval when seen by a normal eye, since the rays of light undergo the same refraction in passing from, as when entering, the organ of vision. Such a test is to be found in the circular outline of the optic nerve entrance. This test of astigmatism was first pointed out at the Ophthalmic Congress at Heidelberg, in 1861, by Dr. Knapp, who showed that in examining by the upright image, the diameter of the optic nerve entrance appears longest in the meridian of the greatest curvature of the cornea, and shortest in the meridian of least curvature; while the contrary is true, when the reversed image is employed—a statement which I was able to verify in the case of Mr. F.

Astigmatism is relieved by the use of cylindrical glasses—lenses, the surfaces of which are cylindrical instead of spherical, and which therefore refract in one meridian only. In the present case, double concave cylindrical glasses of 30-inch virtual focus, with the axes of the cylinders horizontal, completely removed the defect of vision. When the use of glasses was first suggested to Mr. F., he did not hesitate to express his belief that they could be of no benefit to him whatever; but after a moment's trial he was convinced of the contrary, and expressed his delight with almost childish exuberance of joy at the relief which they afforded.

Cylindrical glasses cannot at present be made in this country, or at least in New York, to which my knowledge in this respect is confined; but they may readily be procured of Messrs. Paetz and Flohr, of Berlin, or of Natchez et fils, Paris. A complete set should be included in the armamentarium of any one who makes a specialty of eye diseases.

The defect in the conformation of the cornea upon which astigmatism depends, is congenital. I explain the fact that in the present instance it did not annoy the patient until about the age of eighteen, upon the supposition either that it passed unnoticed, or that, like hyperopia, it was compensated for by the high degree of accommodation of early life. The latter explanation is supported by the influence of mental excitement and bodily fatigue in aggravating the annoyance which the disease occasioned.—*American Med. Times.*

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON: THURSDAY, NOVEMBER 5, 1863.

Dr. H. R. Storer on Chloroform in Midwifery.—Dr. H. R. Storer's paper on the employment of Anæsthetics in Obstetric Medicine and Surgery, published in last week's Journal, is calculated to attract much attention, advocating, as it does, with much earnestness, the use of chloroform alone in this department of practice. Expressing opinions so directly at variance with those which the Editors of this Journal have uniformly held and advocated, our readers will naturally look for some comments from us upon the subject. Without pretending to discuss Dr. Storer's argument in full, for we have as yet not had time for the mature consideration of all his theories, we propose briefly to refer to some of his points and statements.

First, as to the reported cases of death attributed to the use of chloroform in labor. These Dr. Storer dismisses with the simple statement that "to the present date, so far as I am aware, there does not exist on record, from the thousands of obstetric cases in which chloroform has been used, a single instance where death can be legitimately attributed to its influence." Now it really seems to us that in a question of such serious importance, in a paper of such an elaborate and positive character, the profession have a right to ask for something like proof of so grave a statement; for surely no authority in the profession is high enough to be independent of such corroborative evidence. It happens that this very day we have read a carefully written article on the use of chloroform, published in the *Medical Times and Gazette* of September 26th, by Mr. Arthur Ernest Sansom, M.B., late House Physician and Physician Accoucheur Assistant at King's College Hospital. The object of this paper is to *advocate* the use of chloroform, to show the class of cases in which it should be used, to explain the cause of death in fatal cases, and to lay down rules for its employment. The paper is very carefully written, and of course the author is anxious to exclude from his bill of mortality all the cases that he can. It contains an analysis of eighty-four cases of death from chloroform, of which the author says, "these, collected a year ago, were all which I could find narrated with sufficient care to enable me to found any broad conclusions upon them." Of these, *three* were due to the use of chloroform in "*natural labor.*" Quite a number of such cases have been published from time to time in the journals, but probably they were thrown out by the author as unsatisfactory. These three, however, this critical writer admits without question.

The alleged cases of chloroform death in labor, Dr. Storer refers, first, to the impurity of the article used. Dr. Storer subsequently lays much stress upon this point of purity. Now every physician, of course, desires that every drug that he employs should be as free from impurity as possible; but we think the element of impurity has been made altogether too much of a scape-goat of the dangerous qualities of chloroform itself. The question is, will *pure* chloroform kill, and that so suddenly as to give but little opportunity for the use of antidotes to its terrible power? We are strong enough in our national prejudices to believe that pure chloroform can be as well made here as over the water. Duncan & Flockhart are doubtless manufacturers of a pure article; Dr. Storer's assurance is all we want on that point; and yet it happens that in a number of the fatal cases of chloroform inhalation *the chloroform of these manufacturers had been used.* In one of the most carefully-reported cases by Mr. Paget, this was the fatal agent, and a portion of the *same* lot was subsequently used in several instances with impunity. So far as this goes it proves that *pure* chloroform, even Duncan & Flockhart's, is dangerous. The extreme rapidity of the action of chloroform must not be kept out of view in this connection. In Mr. Sansom's paper one of the recorded deaths is of a man, twenty-four years of age, in *half a minute,*—and of twenty-seven deaths which occurred within ten minutes, *fifteen took place in less than two minutes* (*Brit. Med. Jour.*, Feb. 21st, 1857). Surely there is danger that an agent so rapid in its operation may sometimes be given in a dose disproportionate to the pain of labor which it is intended to annihilate, and overwhelm the patient at the same time.

Next, the agent was fatal because improperly administered. And here we may refer to a note on page 257, in which Dr. Storer attributes to a remark of our own, in connection with a paragraph quoted from Dr. Kidd, a significance which does not properly belong to it. We expressed a fear that the fullest knowledge would not disarm chloroform of all its dangers, *not* that its dangerous character was a reason for omitting to learn all we can about it; quite a different suggestion certainly.

We cannot agree with Dr. Storer that the effects of chloroform are much more transient than those of ether. Indeed it is to the reverse of this that we have attributed much of the danger from its inhalation. The extremely volatile character of ether, as every day's experience shows, promptly relieves the system of its narcotic power, so that we feel perfectly sure that any threatening symptoms of asphyxia will vanish at once on the removal of the sponge. Chloroform, on the other hand, is a substance of so much greater density, that when alarming symptoms arise, the deadly power of the vapor already in the lungs has still full opportunity to work. Dr. Storer himself says its weight is "such as after a few inspirations to fill and almost hermetically seal the lungs by its mere gravity," and he accordingly recommends that the patient be placed upon her side that this heavy vapor may have a more ready escape.

We have not touched upon the question of the correctness of Dr. Storer's theory, that the peculiar condition of the parturient female is in itself a protection against the dangers of chloroform inhalation. We certainly are not prepared to admit this assumption without more deliberate consideration than we have yet been able to give to so important a subject.

The subject of the following communication is one the importance of which can hardly be exaggerated. The unfortunate victims of the vice to which it refers are among the most pitiable objects to which our professional sympathies are ever directed. The experience of nearly every physician must have furnished him with cases of this kind of the most embarrassing character. Household restraints and home influence are little better than worthless in these cases, and the prospect of an asylum where they can be received and tenderly cared for will bring an indescribable relief to many. We have no means of knowing how extensive a provision is required for the purpose in our own State, but we hail the commencement of this movement with the greatest satisfaction, and hope it may meet with the signal success which it deserves.

Retreat for Intemperate Women.—The necessity of making some special provision for the victims of intemperance, partly for the benefit of the individual and partly for that of the community, is beginning to attract general attention, and the subject in its various bearings has been brought before the State Board of Commissioners on Insanity, as among the matters deserving their serious consideration.

Aside from the question of establishing a public asylum for inebriates, the advantages of which would be more naturally confined to the middle and lower classes, it appears that there is as yet in New England no place of refuge for intemperate women of good social position except the public and private lunatic asylums, which are unfitted, in the almost unanimous opinion of their superintendents, for the reception of such cases; at many asylums, indeed, admittance being refused to them, alike in justice to the other patients and to the inebriates themselves. The number of applications at the New York General Asylum at Binghamton far exceeds the possible capacity of the building, while the Washingtonian Home in Boston, whose influence for good is already so extended, is for men alone.

In accordance with this apparent want, arrangements have been made by which there will be afforded to a limited number of self-indulgent women, whether addicted to opiates or stimulants, the necessary elements for their cure; namely, voluntary seclusion from temptation, the strictest privacy if desired, a location in the immediate vicinity of the city and yet unrivalled for purity of atmosphere and beauty of scenery. The house selected for the purpose is one constructed with especial reference to a comfortable residence during the winter; attendants will be provided of unexceptionable character, and but few patients will at present be received. For further information application may be made to the Secretary of the Commission, Dr. H. R. Storer, at Hotel Pelham; the other members of the Board being Hon. Josiah Quincy, Jr., of Boston, and Dr. Alfred Hitchcock, of the Governor's Council, of Fitchburg. It may be stated that the step now taken has the cordial approval and endorsement of His Excellency Governor Andrew, Judge Hoar of the Supreme Court, Drs. James Jackson, Jacob Bigelow, John Jeffries, H. I. Bowditch, J. Mason Warren, Tyler of the Asylum at Somerville, Jarvis of Dorchester, and other of our more prominent citizens.

INVESTIGATIONS TOUCHING THE USE OF IODINE.—Dr. Rosenthal, assistant physician at the Vienna General Hospital, has published, in the *Wiener Med. Wochensch.*, a series of papers containing much original matter touching the therapeutic use of iodine. The summing up is as follows:—

1. Large doses of iodide of potassium, combined with a small quantity of fluid, remain a long time in the economy; with large quantities of fluid, they are quickly washed away from the system and pass rapidly into the secretions and excretions. This circumstance should be carefully noticed.

2. When iodide of potassium is taken internally, it is found, not only in the urine, saliva, and other secretions, but also in the alvine evacuations, within from four to seven hours, whether the stools be aqueous or the reverse.

3. In the administration of iodide of iron, iodine is separated in considerable quantities and found with a large proportion of the iron in the urine. Fæcal matter contains much iron and a small amount of iodine. The same phenomena may be noticed when iodide of mercury is used.

4. Frictions with an ointment containing iodide of potassium upon sound skin will cause the iodine to be detected in the urine and saliva.

5. Iodine is found in the urine of those who take baths in which iodide of potassium is dissolved, even when the rectum and urethra are kept free from the action of the bath. This is proved by examining the urine, and by noting a large diminution of the iodine in the water used for the bath.

6. The intestinal mucous membrane takes up iodine very energetically in the form of enemata, and this is the case even with very weak solutions of iodide of potassium.

7. Large doses of iodide of potassium, or small doses taken for a long time, are not well borne in certain pathological states of the eco-

nomy; in fact, large doses of iodine, or concentrated solutions, are very prejudicial to the system.—*London Lancet.*

Loss of Life in Collieries.—In 1862 there were 738 fatal accidents in collieries in Great Britain, causing 1133 deaths. Such a terrible mortality does not indicate the efficiency of the inspectorship of mines, as the public have been led to anticipate. Accidents affecting life amongst the mining population are in the majority of instances preventable. There are many difficulties in carrying out precautionary efforts for the salvation of life, but these are not insurmountable. The ignorance of workmen is a fertile cause of mischief. This ignorance must be met, as it no doubt will be, by the spread of information amongst those immediately interested.—*Ibid.*

A Year's Railway Work in Great Britain.—In the year 1862, the enormous number of 180,429,071 passengers travelled on the railways of the United Kingdom, besides 56,656 season-ticket holders, who, of course, travelled very many times; and besides, also, 262,334 horses, 386,864 dogs, 3,094,183 cattle, 7,800,928 sheep, and 1,989,892 pigs. The passengers were more than in 1861 by about 7,000,000. They paid £12,295,273 for their fares. The first-class passengers paid £3,332,380; the second-class, £4,018,221; the third-class, 4,639,250. 12·80 in every hundred went first class, 28·75 second class, 58·45 third class. The proportion of third-class passengers is rather increasing, and of second-class rather diminishing. Thirty-five passengers were killed (nine of them owing to their own misconduct or want of caution), and 536 were injured. This is less than half the number who lost their lives in 1861 by railway accidents.—*Hunt's Merchant's Magazine.*

VITAL STATISTICS OF BOSTON.

For the Week ending Saturday, October 31st, 1863.

DEATHS.

	Males.	*Females.*	*Total.*
Deaths during the week - - - - - - -	38	51	89
Ave. mortality of corresponding weeks for ten years, 1853—1863,	34.7	35.4	70.1
Average corrected to increased population - - - - -	00	00	76.67
Death of persons above 90 - - - - - - -	0	0	0

Mortality from Prevailing Diseases.

Phthisis.	Croup.	Scar. Fev.	Pneumon.	Variola.	Dysentery.	Typ. Fever.	Chol. Infan.
15	7	0	5	1	1	6	1

Erratum.—Page 272, 14th line from the bottom, for "Ludger, Lallemand," read *Ludger Lallemand.*

Died,—In West Granville, Sept. 11th, Dr. Vincent Holcombe, aged 68.

Deaths in Boston for the week ending Saturday noon, Oct. 31st, 89. Males, 38—Females, 51.—Abortion, 1—accident, 3—apoplexy, 1—congestion of the brain, 1—disease of the brain, 1—bronchitis, 1—cancer, 2—cholera infantum, 1—cholera morbus, 1—consumption, 15—convulsions, 2—croup, 7—cystitis, 1—debility, 1—diarrhœa, 1—diphtheria, 1—dropsy, 3—dropsy of the brain, 5—drowned, 1—dysentery, 1—epilepsy, 1—bilious fever, 1—typhoid fever, 6—typhomania, 1—disease of the heart, 2—intemperance, 1—infantile disease, 2—disease of the kidneys, 1—inflammation of the knee, 1—inflammation of the lungs, 5—marasmus, 2—measles, 1—mortification, 1—old age, 2—paralysis, 2—premature birth, 2—smallpox, 1—unknown, 7.

Under 5 years of age, 30—between 5 and 20 years, 11—between 20 and 40 years, 21—between 40 and 60 years, 16—above 60 years, 11. Born in the United States, 55—Ireland, 27—other places, 7.